United States Department of Agriculture
Natural Resources Conservation Service

USDA NRCS

ECOLOGICAL SITE DEVELOPMENT

National Cooperative Soil Survey
Southern Regional Meeting

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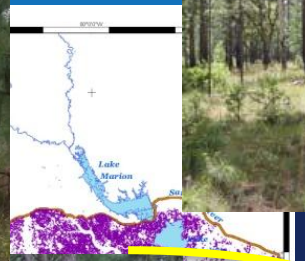
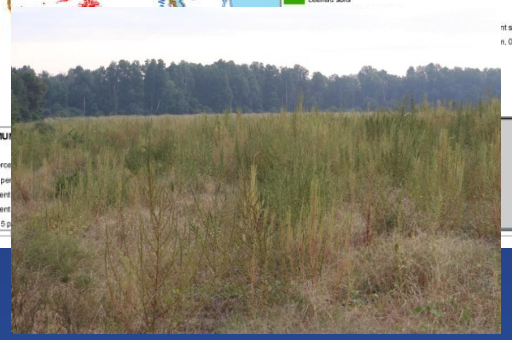
What are Ecological Sites?

- Distinctive kinds of land with specific soil, landform and physical characteristics that produces distinctive kinds and amounts of vegetation
- Responds similarly to management actions and natural disturbances
- Serves as a concept for organizing the landscape
- A soil mapunit can contain several Eco Sites

A Conceptual Model is developed that identifies:

- Reference communities and their alternative states;
- Triggers that cause a shift from one plant community to another (i.e. grazing timing or intensity, fire, energy inputs, etc.); and,
- Management actions or practices needed to restore desired condition (i.e. browsing livestock, herbicides, grazing specifics, burning, brush management, etc.)





1 Reference State
Longleaf Pine/Wiregrass/Bluestem
1.1 2-3 year fire frequency
1.2 Longleaf Pine/Wiregrass/Bluestem/Hardwood spp. (< 5 ft.)
4-5 year fire frequency
1.2A
1.1A

2 Mixed Hardwood / Longleaf Pine Forest State

3 Hardwood Forest State
(scattered other pines)
(closed canopy)

4 Planted Longleaf Pine-Native Grass State

5 Pine Plantation State

6 Cropland or Pasture State

7 Abandoned Old Field State

T1A
T2A
T2B
T3A
T4A
T6A
T7A
T7B
R2A
R5A
R7A

LEGEND
1.1A Reduced fire frequency
1.2A Shrub and hardwood control, prescribed fire
T1A No fire, hardwood canopy competition
T2A No fire, loss of understory and longleaf
T2B Conversion of land use: clear-cut, heavy site preparation and establishment
T3A Conversion of land use: clear-cut, heavy site preparation and establishment
T4A No fire, hardwood canopy competition
T6A Cessation of forage or crop production practices
T7A Continued lack of management or disturbance
T7B Conversion of land use: vegetation control, site preparation and establishment
R2A Selective tree harvest, understory vegetation control, prescribed fire
R5A Selective tree harvest, understory vegetation control, grass planting, prescribed fire
R7A Chemical or mechanical vegetation control, establishment of forages

Utilities for Conservation Planning

Restoration: Returning a site to its natural or desired state

Maintenance: Keeping the site at its current condition

Transition: Converting an existing site into another desired state or community

Management Interpretations: Wildlife, grazing, wood products, invasive plant control, enhancing targeted species, etc.

Can be incorporated into NRCS Farm Bill programs and conservation practices

Planners utilize the model to assist landowners……

Desired states

Current state:

Greenwood Plantation, Thomasville, GA

One More Thing

Ecological Site Descriptions must use a multi-disciplinary approach between Plants and Animals (biotic) and Soils (abiotic). This causes these disciplines to work together in the field where they otherwise may not.

There are three types of ecological descriptions:

- Provisional
- Approved
- Correlated

Provisional Sites contain:

- Soil units and corresponding vegetation groupings;
- Draft state and transition model; and
- Passed QC/QA protocols; and,
- Published in the Ecological Site Information System (ESIS)

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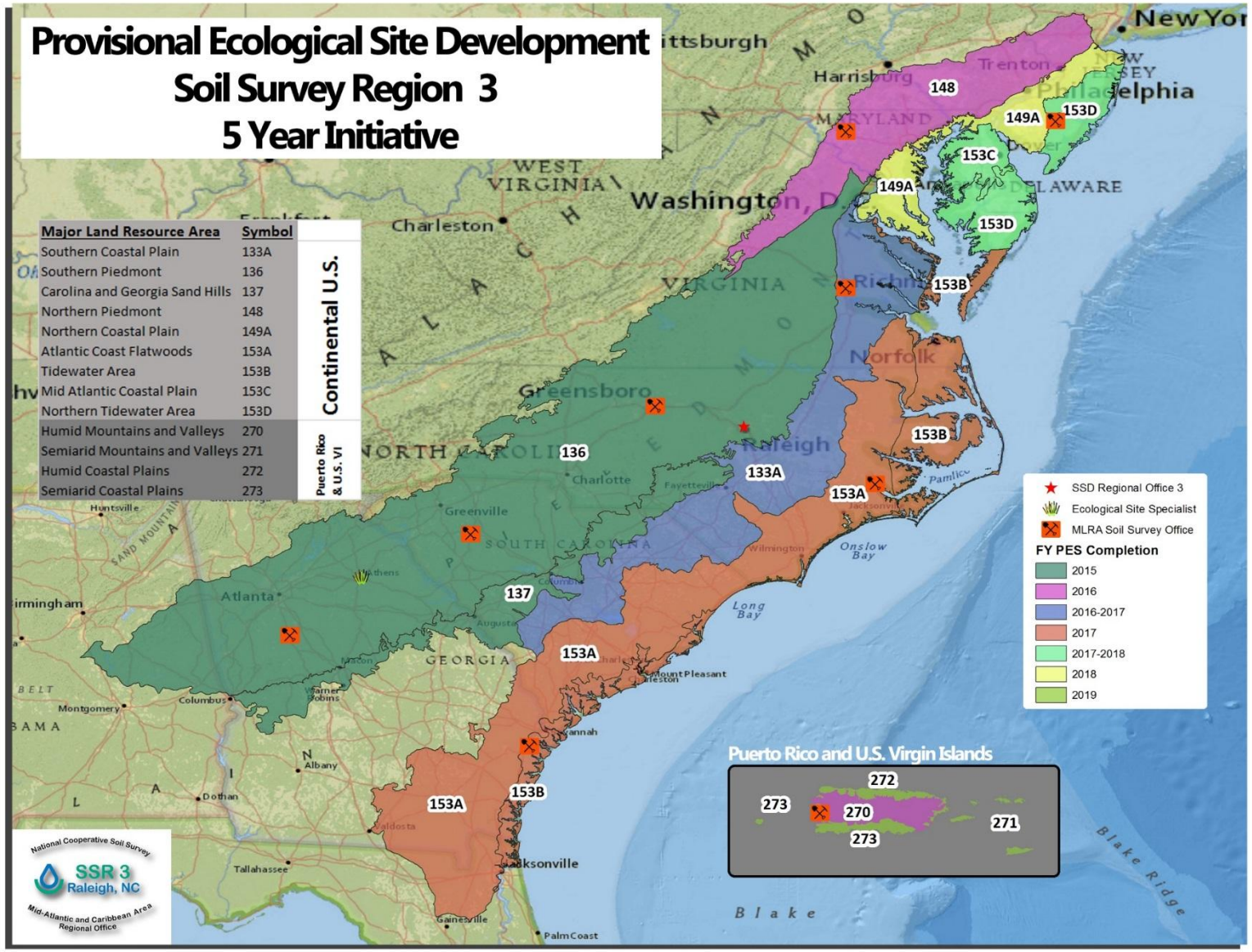
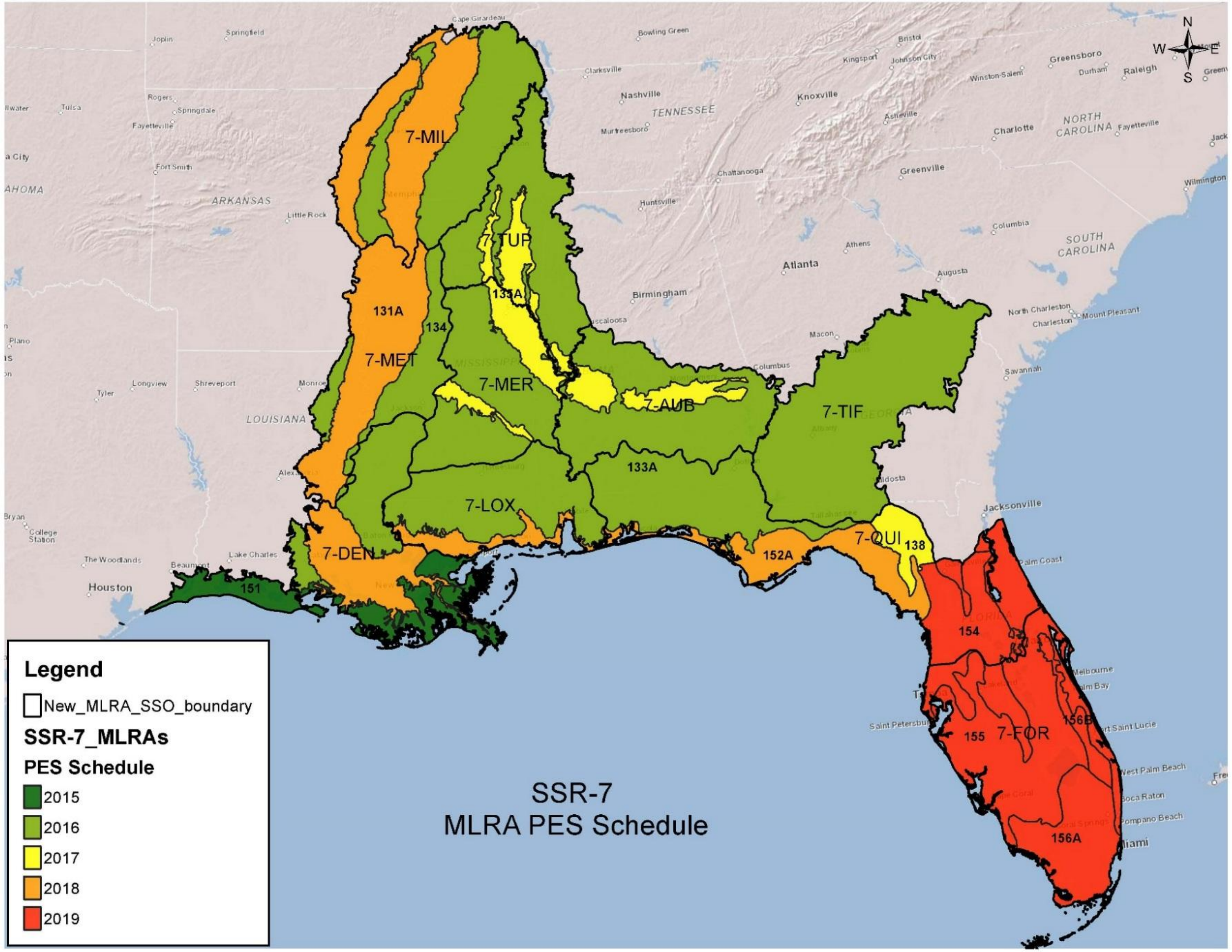
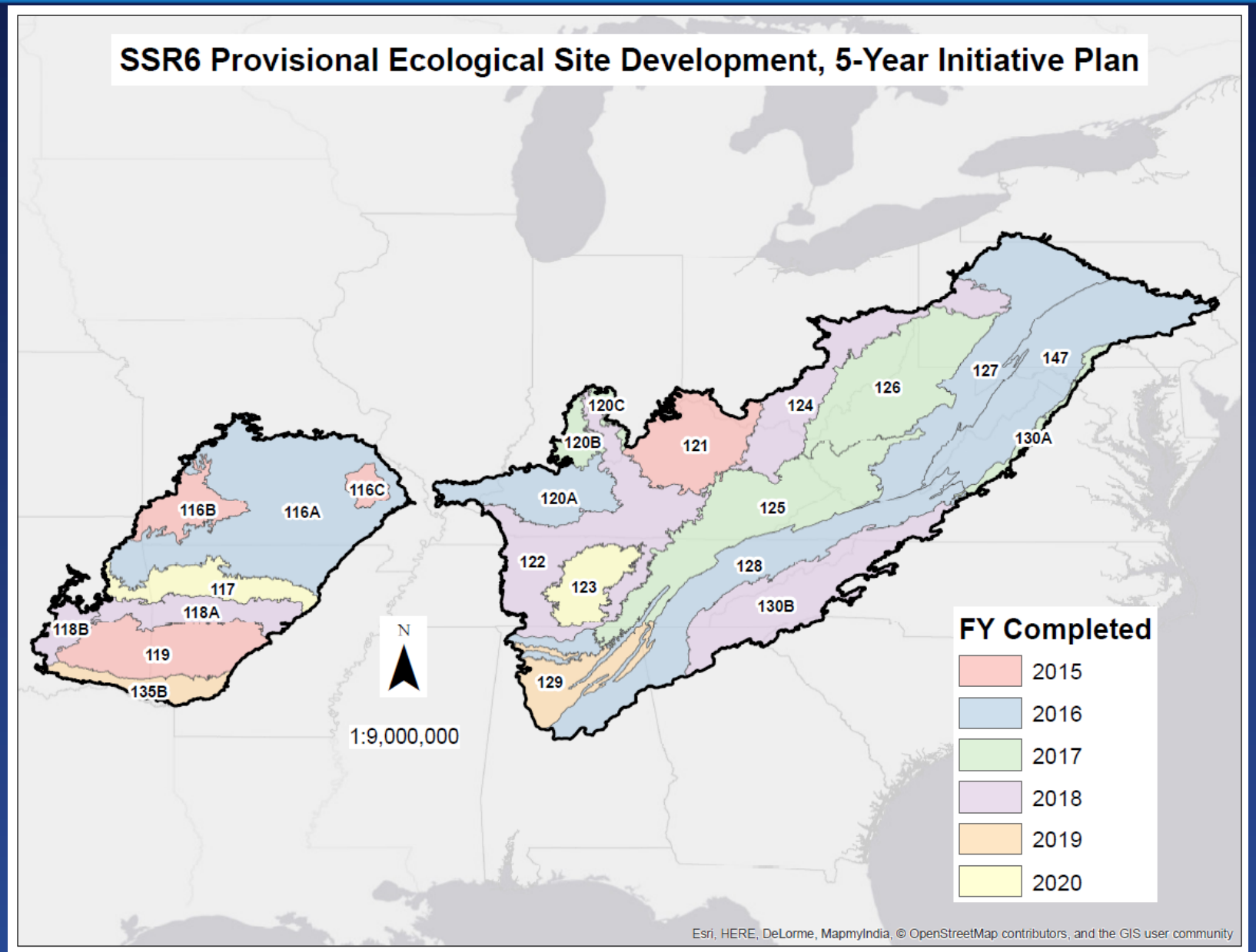



SSR-7
MLRA PES Schedule
Legend
New_MLRA_SSO_boundary
SSR-7_MLRAs
PES Schedule
2015
2016
2017
2018
2019
7-MIL
7-TUP
133A
131A
134
7-MET
7-MER
7-AUB
7-TIF
133A
7-LOX
7-DEN
151
152A
7-QUI
138
154
155
7-FOR
156B
156A
N
W
E
S
TENNESSEE
ARKANSAS
LOUISIANA
NORTH CAROLINA
SOUTH CAROLINA
Nashville
Atlanta
Birmingham
Houston
Jacksonville
Charlotte
Knoxville
Greenville
Little Rock
Shreveport
Savannah
Tulsa


SSR6 Provisional Ecological Site Development, 5-Year Initiative Plan
116C
116B
116A
117
118A
118B
119
135B
120C
120B
120A
121
122
123
124
125
126
127
128
129
130A
130B
147
N
1:9,000,000
FY Completed
2015
2016
2017
2018
2019
2020
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

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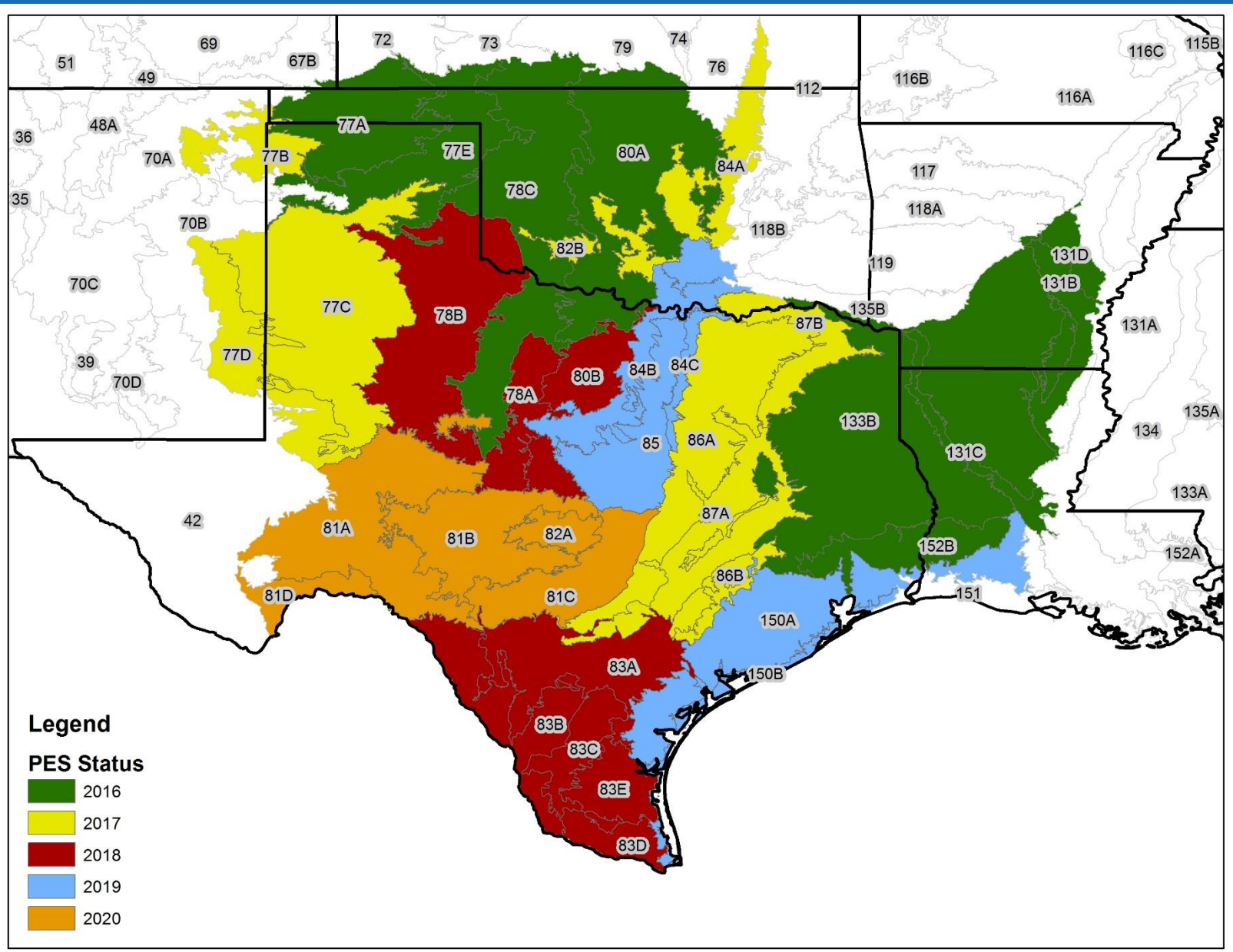
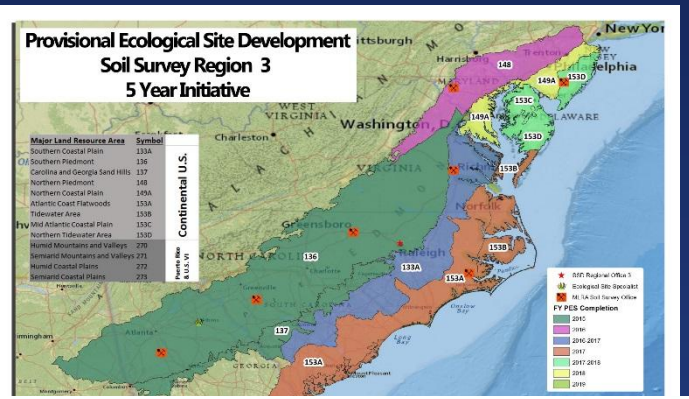
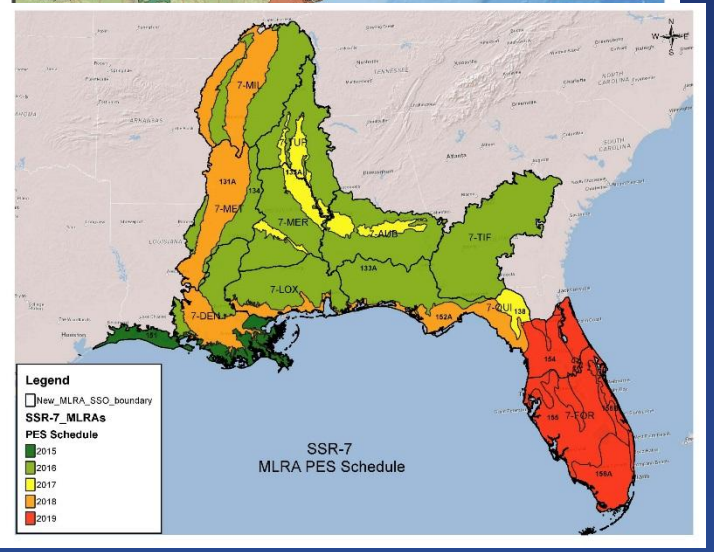
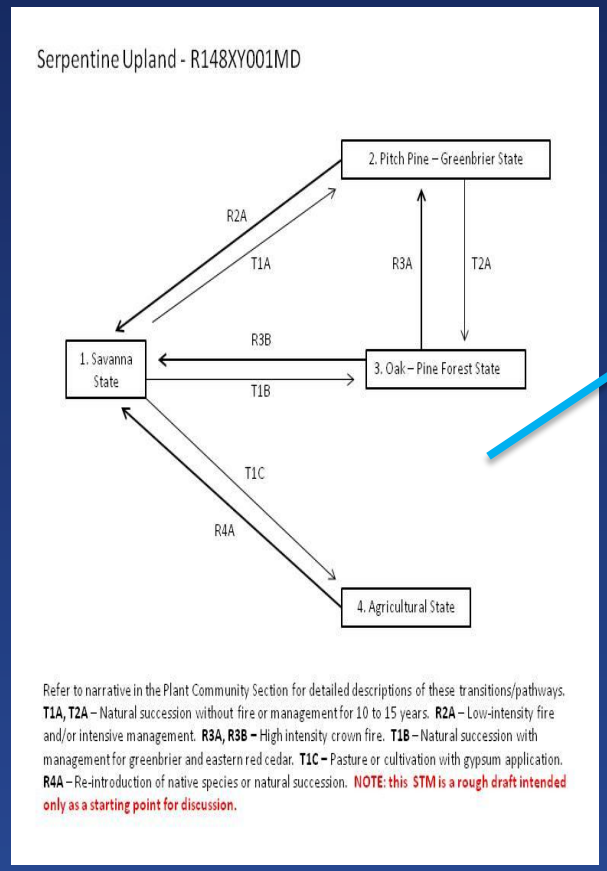


Future Goals: user-friendly, modern database



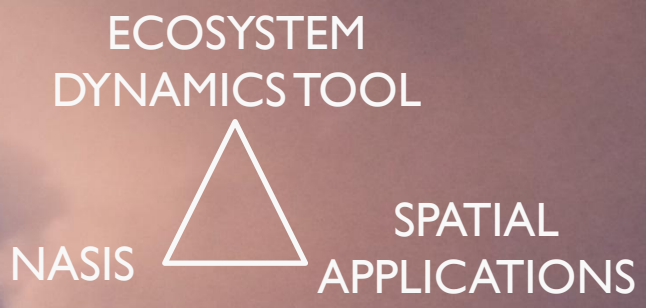




Transition	Ecological process	Primary Driver	Secondary Driver	Indicator
T1A	Population Biology Mechanism (Mortality, recruitment, dispersal, competition)	Climatic or management event (chronic condition), including Practice Code if applicable)	Climatic or management event (chronic condition), including Practice Code	Quantitative or qualitative indicator of conditions initiating transition
T2A				
T1C, T2B, T3A				
T4B				

PRIORITIES for NATIONAL ECOLOGICAL SITE TEAM

- CONVERT ESIS TO AN ANALYTICAL SPATIAL DATABASE



- ACCELERATE DEVELOPMENT OF ES GROUPS/GENERAL STMs
- MAKE MLRA/LRU QUANTITATIVE
- ESTABLISH EXPLICIT LINKS BETWEEN STMs and CONSERVATION PLANNING

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Questions?